CLAIMS

1   1. A server in a system providing information
2 to a user terminal being able to display a map
3 comprising:

4   a database for holding a specific information
5 document having index information composed of a
6 plurality of elements out of information documents
7 having attribute information representing attributes
8 of service information to be provided as bubble data
9 in which spatial range information in the three-
10 dimensional space is associated with retrieval
11 information for obtaining said service information;

12   a retrieving unit for retrieving specific
13 bubble data including coordinate information and
14 display object attribute information in said bubble
15 data on the basis of a mapping request, transmitted
16 from said user terminal, having said coordinate
17 information on an object displayed on said map and said
18 display object attribute information representing
19 attributes of service information to be provided by
20 said object; and

21   a notifying unit for notifying said user
22 terminal of a mapping response having said spatial
23 range information, said attribute information and
24 said retrieval information included in said specific
25 bubble data.

1   2. The server according to claim 1, wherein

2 said notifying unit notifies of said mapping response

3 having spatial range information including a similar

4 bubble diameter having a diameter according to a scale

5 of a map displayed on said user terminal and address

6 information.

1   3. The server according to claim 1, wherein

2 said database correlates said bubble data with a

3 unique number by which contents of service information

4 of said bubble data can be identified, and holds said

5 bubble data and said unique number.

1   4. A server in a system providing information

2 to a user terminal being able to display a map

3 comprising:

4   a database for holding a specific information

5 page having index information composed of a plurality

6 of elements relating to attribute information out of

7 information pages having attribute information

8 representing attributes of various information

9 relating to an object or service information relating

10 to said various information as bubble data in which

11 spatial range information composed of latitude,

12 longitude, altitude and a bubble diameter of said

13 object in the three-dimensional space is associated

14 with address information for obtaining said service
15 information;

16   a retrieving unit for retrieving specific
17 bubble data including coordinate information and
18 display object attribute information in said bubble
19 data on the basis of a mapping request, transmitted
20 from said user terminal, having said coordinate
21 information in the three-dimensional space composed
22 of latitude, longitude and altitude of an object
23 displayed on said map and said display object
24 attribute information representing attributes of
25 various information relating to said object displayed
26 on said map or service information relating to said
27 various information; and

28   a notifying unit for notifying said user
29 terminal of a mapping response having said spatial
30 range information, said attribute information and
31 said address information of said specific bubble data.

1   5. The server according to claim 4, wherein
2   said notifying unit notifies of said mapping response
3   having spatial range information including a similar
4   bubble diameter having a diameter according to a scale
5   of a map displayed on said user terminal and address
6   information.

1   6. The server according to claim 4, wherein

2   said retrieving unit retrieves said specific bubble

3   data in another database connected to a network on the

4   basis of said mapping request.

1   7. The server according to claim 4 further

2   comprising:

3   a Web information outputting unit for holding

4   user information; and

5   an address generating unit for generating an

6   address at which said user information held in said

7   Web information outputting unit is held.

1   8. The server according to claim 4, wherein

2   said database holds an animation element to be

3   displayed on said user terminal in document type

4   definition information.

1   9. The server according to claim 4, wherein

2   said database holds an application program element for

3   displaying said map in document type definition

4   information.

1   10.The server according to claim 4, wherein

2   said database holds a communication partner

3   information element relating to a specific

4   communication partner in document type definition

5   information.

1   11.The server according to claim 4, wherein
2   said database classifies document type definition
3   information according to a plurality of elements, and
4   holds said document type definition information.

1   12.The server according to claim 4, wherein
2   said database correlates said bubble data with a
3   unique number by which contents of service information
4   of said bubble data can be identified, and holds said
5   bubble data and said unique number.

1   13.The server according to claim 12, wherein
2   said database holds monitoring bubble data for
3   detecting a moving object and a bubble diameter of said
4   monitoring bubble data based on position information
5   on said moving object, and records a moving object
6   element by which said moving object can be specified
7   in a file held in said database.

1   14.The server according to claim 4, wherein
2   said database records data relating to a similar
3   bubble diameter having a diameter according to a scale
4   of a map displayed on said user terminal in a file.

1   15.The server according to claim 4, wherein
2   said database holds at least either one of history

3   information of address information caused by an access

4   of said user terminal and identifier information by

5   which said user terminal can be identified in a file.

1   16.The server according to claim 4, wherein

2   said database holds data relating to a counter whose

3   count value can be changed in a file.

1   17.The server according to claim 4, wherein

2   said database holds data relating to an accessible

3   time in a file.

1   18.The server according to claim 4, wherein

2   said database holds data relating to an application

3   program for displaying a map on said user terminal in

4   a file.

1   19.The server according to claim 4, wherein

2   said database handles address information based on

3   said spatial range information as an electronic mail

4   address, and holds said spatial range information

5   correspondingly to said electronic mail address.

1   20.A server in a system providing information

2   to a user terminal being able to display a map

3   comprising:

4   a database for holding a specific home page

5   having document type definition information composed
6   of a plurality of tags relating to attribute
7   information out of home pages having said attribute
8   information representing attributes of facility
9   information relating to a building or service
10 information of said facility information as bubble
11 data in which spatial range information composed of
12 latitude, longitude, and altitude and a bubble
13 diameter of said building in the three-dimensional
14 space is associated with a uniform resource locator
15 for obtaining said service information;

16   a retrieving unit for retrieving specific
17 bubble data including coordinate information and
18 display object attribute information in said bubble
19 data on the basis of a mapping request having said
20 coordinate information in the three-dimensional
21 space composed of latitude, longitude and altitude of
22 a building displayed on said map and said display
23 object attribute information representing attributes
24 of facility information relating to a building
25 displayed on said map or service information of said
26 facility information; and

27   a notifying unit for notifying said user
28 terminal of a mapping response having said spatial
29 range information, said attribute information and
30 said uniform resource locator of said specific bubble
31 data.

1   21.The server according to claim 20, wherein
2 said notifying unit notifies of said mapping response
3 having spatial range information including a similar
4 bubble diameter having a diameter according to a scale
5 of a map displayed on said user terminal and address
6 information based on said coordinate information
7 included in said mapping request.

1   22.The server according to claim 20, wherein
2 said database correlates said bubble data with a
3 unique number by which contents of service information
4 of said bubble data can be identified, and holds said
5 bubble data and said unique number.

1   23.A user terminal in a system providing
2 information to said user terminal being able to
3 display a map comprising:
4   a map information outputting unit for
5 outputting map information;
6   a display unit for displaying an image of an
7 object on the basis of said map information outputted
8 from said map information outputting unit;
9   a transmitting unit for transmitting a
10 mapping request having coordinate information in the
11 three-dimensional space on said object displayed on
12 said display unit and display object attribute

13   information   representing   attributes   of   service
14   information to be provided by said object to a server
15   connected to said user terminal over a network;

16   a receiving unit for receiving a mapping
17   response having spatial range information in the
18   three-dimensional space corresponding to said
19   coordinate   information,   attribute   information
20   representing   attribute   information   of   service
21   information to be provided by said object, and
22   retrieval information for obtaining said service
23   information notified from said server in response to
24   said mapping request;

25   a mapping unit for displaying an image
26   geometry along with said map at a position indicated
27   by said spatial range information included in said
28   mapping response on said display unit; and

29   a mapping data holding unit for correlating
30   said image geometry displayed by said mapping unit
31   with said retrieval information included in said
32   mapping response, and holding said image geometry and
33   said retrieval information.

1   24.A user terminal in a system providing
2   information to said user terminal being able to
3   display a map comprising:

4   a   map   information   outputting   unit   for
5   outputting map information on an object in the

6   three-dimensional space;

7   a display unit for displaying an image of said

8   object on a screen on the basis of said map information

9   outputted from said map information outputting unit;

10   a   transmitting   unit   for   transmitting   a

11 mapping request having coordinate information in the

12 three-dimensional   space   composed   of   latitude,

13 longitude and altitude of said object displayed on

14 said display unit and display object attribute

15 information   representing   attributes   of   various

16 information   relating   to   said   object   or   service

17 information relating to said various information to

18 a server connected to said user terminal over a

19 network;

20   a   receiving   unit   for   receiving   a   mapping

21 response having spatial range information composed of

22 latitude, longitude, altitude and a bubble diameter

23 of   said   object   in   the   three-dimensional   space

24 corresponding to said coordinate information and

25 address   information   for   obtaining   said   service

26 information notified from said server in response to

27 said mapping request;

28   a   mapping   unit   for   displaying   an   image

29 geometry along with an image of said object at a

30 position indicated by said spatial range information

31 included in said mapping response on said display

32 unit; and

33   a mapping data holding unit for correlating
34 said image geometry displayed by said mapping unit
35 with said address information included in said mapping
36 response, and holding said image geometry and said
37 address information.

1   25.A user terminal in a system providing
2 information to said user terminal being able to
3 display a map comprising:
4   a map information outputting unit for
5 outputting map information on a building in the
6 three-dimensional space;
7   a display unit for displaying an image of said
8 building on a screen on the basis of said map
9 information outputted from said map information
10 outputting unit;
11   a transmitting unit for transmitting a
12 mapping request having coordinate information
13 composed of latitude, longitude, altitude and a bubble
14 diameter in the three-dimensional space of said
15 building displayed on said display unit and display
16 object attribute information representing attributes
17 of facility information relating to said building or
18 service information of said facility information to
19 a server connected to said user terminal over a
20 network;
21   a receiving unit for receiving a mapping

22 response having spatial range information composed of

23 latitude, longitude, altitude and a bubble diameter

24 of said building in the three-dimensional space

25 corresponding to said coordinate information and a

26 uniform resource locator for obtaining said service

27 information notified from said server in response to

28 said mapping request;

29 a mapping unit for displaying an image

30 geometry along with an image of said building at a

31 position indicated by said spatial range information

32 included in said mapping response on said display

33 unit; and

34 a mapping data holding unit for correlating

35 said image geometry displayed by said mapping unit

36 with said uniform resource locator included in said

37 mapping response, and holding said image geometry and

38 said uniform resource locator.

1 26. The user terminal according to claim 25,

2 wherein said receiving unit receives said mapping

3 response having spatial range information including

4 a similar bubble diameter having a diameter according

5 to a scale of said map displayed on said display unit

6 and address information based on said coordinate

7 information included in said mapping request.

1 27. The user terminal according to claim 25

2 further comprising a detecting unit for detecting

3 position information including a latitude of an object,

4 a longitude thereof, an altitude thereof, a direction

5 thereof, and an inclination angle thereof in the three

6 dimensional space.

1   28.The user terminal according to claim 27,

2 wherein said detecting unit comprises at least any one

3 of a direction sensor being able to measure the

4 direction, a satellite information receiving unit

5 being able to receive satellite information through

6 the use of a global positioning system, and an

7 inclination sensor being able to measure an

8 inclination angle of said user terminal with respect

9 to the horizontal line.

1   29.The user terminal according to claim 25,

2 wherein said transmitting unit transmits said mapping

3 request using an electronic mail address generated on

4 the basis of said coordinate information.

1   30.An information providing service system

2 providing information to a user terminal being able

3 to display a map comprising:

4   a server for holding a specific information

5 page having document type definition information out

6 of information pages having attribute information

7 representing attributes of various information
8 relating to an object or service information relating
9 to said various information and said document type
10 definition information composed of a plurality of
11 elements as bubble data in which spatial range
12 information composed of a latitude of said object, a
13 longitude thereof, an altitude thereof and a bubble
14 diameter thereof in the three-dimensional space is
15 associated with address information for obtaining
16 said service information;

17 said user terminal connected to said server
18 over a network to display said various information
19 retrieved using said bubble data;

20 said server comprising:

21 a database for holding said bubble
22 data;

23 a retrieving unit for retrieving
24 specific bubble data including coordinate
25 information and display object attribute information
26 in said bubble data on the basis of a mapping request
27 having said coordinate information in the three-
28 dimensional space composed of a latitude of said
29 object, a longitude thereof and an altitude thereof
30 displayed on said map and said display object
31 attribute information representing attributes of
32 various information relating to said object or service
33 information relating to said various information

34 transmitted from said user terminal;

35   a notifying unit for notifying said
36 user terminal of a mapping response having said space
37 region information, said attribute information, and
38 said address information of said specific bubble data;

39   said user terminal comprising:

40   a map information outputting unit for
41 outputting map information on an object in the
42 three-dimensional space;

43   a display unit for displaying an image
44 of an object on a screen on the basis of said map
45 information outputted from said map information
46 outputting unit;

47   a transmitting unit for transmitting a
48 mapping request having space region information
49 composed of a latitude of said object, a longitude
50 thereof, an altitude thereof and a bubble diameter
51 thereof in the three-dimensional space of an image of
52 said object displayed on said display unit and
53 attribute information representing attributes of
54 various information relating to said object or service
55 information relating to said various information to
56 said server connected to said user terminal over a
57 network;

58   a receiving unit for receiving a
59 mapping response having spatial range information
60 composed of a latitude of said object, a longitude

61 thereof, an altitude thereof, and a bubble diameter

62 thereof in the three-dimensional space corresponding

63 to said space region information and address

64 information for obtaining said service information

65 notified from said server in response to said mapping

66 request;

67 a mapping unit for displaying an image

68 geometry along with an image of said object at a

69 position indicated by said space region information

70 included in said mapping response; and

71 a mapping data holding unit for

72 correlating said image geometry displayed by said

73 mapping unit with said address information included

74 in said mapping response, and holding said image

75 geometry and said address information.

1 31. An information providing service

2 system providing information to a user terminal being

3 able to display a map comprising:

4 a database for holding a specific information

5 page having document type definition information out

6 of information pages having attribute information

7 representing attributes of various information

8 relating to an object or service information relating

9 to said various information and said document type

10 definition information composed of a plurality of

11 elements as bubble data in which spatial range

12 information composed of a latitude of said object, a

13 longitude thereof, an altitude thereof and a bubble

14 diameter thereof in the three-dimensional space is

15 associated with address information for obtaining

16 said service information;

17   a user terminal connected to said database

18 over a network to display said various information

19 retrieved using said bubble data;

20   a retrieving unit for retrieving specific

21 bubble data including coordinate information and

22 display object attribute information in said bubble

23 data on the basis of a mapping request having said

24 coordinate information in the three-dimensional

25 space composed of a latitude of said object, a

26 longitude thereof and an altitude thereof displayed

27 on said map and said display object attribute

28 information representing attributes of various

29 information relating to said object or service

30 information relating to said various information;

31   a notifying unit for notifying said user

32 terminal of a mapping response having said spatial

33 range information, said attribute information and

34 said address information of said specific bubble data;

35   said user terminal comprising:

36   a map information outputting unit for

37 outputting map information on an object in the

38 three-dimensional space;

39   a display unit for displaying an image

40 of said object on a screen on the basis of said map

41 information outputted from said map information

42 outputting unit;

43   a transmitting unit for transmitting a

44 mapping request having coordinate information

45 composed of a latitude of said object, a longitude

46 thereof, an altitude thereof and a bubble diameter

47 thereof in the three-dimensional space displayed on

48 said display unit and attribute information

49 representing attributes of various information

50 relating to said object or service information

51 relating to said various information to said server

52 connected to said user terminal over a network;

53   a receiving unit for receiving a

54 mapping response having spatial range information

55 composed of a latitude of said object, a longitude

56 thereof, an altitude thereof and a bubble diameter

57 thereof in the three-dimensional space corresponding

58 to said spatial range information and address

59 information for obtaining said service information

60 notified from said server in response to said mapping

61 request;

62   a mapping unit for displaying an image

63 geometry along with an image of said object at a

64 position indicated by said spatial range information

65 included in said mapping response on said display

66 unit; and

67   a mapping data holding unit for

68 correlating said image geometry displayed by said

69 mapping unit with said address information included

70 in said mapping response, and holding said image

71 geometry and said address information.

1   32. An information providing service

2 method in a system providing information to a user

3 terminal being able to display a map comprising the

4 steps of:

5   a selecting step of selecting an object

6 displayed on a map by said user terminal;

7   a user terminal transmitting step of

8 transmitting coordinate information relating to said

9 object selected at said selecting step and display

10 object attribute information representing attributes

11 of service information to be provided by said object

12 from said user terminal to a server connected to said

13 user terminal over a network;

14   a server transmitting step of transmitting

15 spatial range information, attribute information and

16 address information to said user terminal from said

17 server on the basis of said coordinate information and

18 said display object attribute information

19 transmitted at said user terminal transmitting step;

20 and

21   a mapping step of displaying an image geometry
22 along with said object at a position indicated by said
23 spatial range information transmitted at said server
24 transmitting step on a display unit of said user
25 terminal.

1   33.   An   information   providing   service
2 method in a system providing information to a user
3 terminal being able to display a map comprising the
4 steps of:

5   a map displaying step of displaying a map on
6 a display unit displaying an image in said user
7 terminal;

8   a selecting step of selecting an object from
9 map information displayed at said map displaying step
10 in said user terminal;

11   a transmitting step of transmitting a mapping
12 request   having   coordinate   information   in   the
13 three-dimensional space relating to said object
14 selected at said selecting step and display object
15 attribute information representing attributes of
16 service information to be provided from said user
17 terminal to a server connected to said user terminal
18 over a network;

19   a retrieving step of retrieving by said server
20 specific   bubble   data   including   coordinate
21 information and display object attribute information

22   in bubble data in which spatial range information
23   composed of a latitude of said object, a longitude
24   thereof, an altitude thereof and a bubble diameter
25   thereof in the three-dimensional space is associated
26   with   address   information   for   obtaining   service
27   information provided by said object on the basis of
28   said mapping request at said transmitting step;

29   a notifying step of notifying said user
30   terminal from said server of a mapping response having
31   said spatial range information and said address
32   information of said specific bubble data retrieved at
33   said retrieving step;

34   a mapping step of displaying an image geometry
35   along with said object at a position indicated by said
36   spatial range information included in said mapping
37   response notified at said notifying step on said
38   display unit in said user terminal; and

39   a providing step of providing said image
40   geometry and said map displayed at said mapping step
41   to said user terminal.

1   34.The information providing service method
2   according to claim 33, wherein at said map displaying
3   step, said user terminal displays said map on said
4   screen on the basis of at least either one of the
5   latitude or the longitude obtained.

1   35. The information providing service method
2 according to claim 33, wherein said notifying step
3 comprises the steps of:
4   a changing step of outputting a similar bubble
5 diameter having a diameter according to a scale of said
6 map displayed on said display unit of said user
7 terminal from said server on the basis of said
8 coordinate information included in said mapping
9 request transmitted at said transmitting step; and
10   an inserting step of inserting said similar
11 bubble diameter outputted at said changing step into
12 said mapping response in said user terminal.

1   36. The information providing service method
2 according to claim 35, wherein at said changing step,
3 said server changes said similar bubble diameter on
4 the basis of at least any one of the number of accesses,
5 an accessible time and an accessible season.

1   37. The information providing service method
2 according to claim 33, wherein at said notifying step,
3 said server notifies of information relating to an
4 application program for displaying a map on said user
5 terminal.

1   38. The information providing service method
2 according to claim 33, wherein at said retrieving step,

3   said server retrieves using a counter whose count

4   value can be changed by an access.

1   39.The information providing service method

2   according to claim 38, wherein at said retrieving step,

3   said server nullifies a predetermined file when said

4   count is stopped.

1   40.The information providing service method

2   according to claim 33, wherein at said retrieving step,

3   retrieval is performed on the basis of the number of

4   accesses that said server can receive concurrently.

1   41.The information providing service method

2   according to claim 33, wherein at said retrieving step,

3   retrieval is performed on the basis of communication

4   partner   information   relating   to   a   specific

5   communication partner.

1   42.The information service providing method

2   according to claim 33, wherein said retrieving step

3   comprises the steps of:

4   a   reading   step   of   reading   communication

5   partner bubble data agreeing with information set

6   beforehand relating to said communication partner in

7   said server;

8   a present position information receiving step

9   of receiving present position information on said user

10   terminal by said server; and

11   an approach detecting step of detecting

12   approach of said user terminal and said communication

13   partner to each other by said server on the basis of

14   said communication partner bubble data and said

15   present position information.

1   43. An information service providing method in

2   a system providing information to a user terminal

3   being able to display a map comprising the steps of:

4   a map displaying step of displaying a map on

5   a display unit displaying an image in said user

6   terminal;

7   a selecting step of selecting an object from

8   map information displayed at said map displaying step

9   in said user terminal;

10   a transmitting step of transmitting a mapping

11   request having coordinate information composed of a

12   latitude of said object, a longitude thereof, an

13   altitude thereof and a bubble diameter thereof in the

14   three-dimensional space selected at said selecting

15   step and display object attribute information

16   representing attributes of various information

17   relating to said object or service information

18   relating to said various information from said user

19   terminal to a server connected to said user terminal

20   over a network;

21   a retrieving step of retrieving by said server

22   specific bubble data including said coordinate

23   information and said display object attribute

24   information in bubble data in which spatial range

25   information composed of a latitude of said object, a

26   longitude thereof, an altitude thereof and a bubble

27   diameter thereof in the three-dimensional space is

28   associated with address information for obtaining

29   various information relating to said object or service

30   information relating to said various information on

31   the basis of said mapping request at said transmitting

32   step;

33   a notifying step of notifying said user

34   terminal from said server of a mapping response having

35   said spatial range information and said address

36   information of said specific bubble data retrieved at

37   said retrieving step; and

38   a mapping step of displaying an image geometry

39   along with said object at a position indicated by said

40   spatial range information included in said mapping

41   response on said display unit of said user terminal

42   on the basis of said specific bubble data notified at

43   said notifying step.

1   44. An information providing service method in

2   a system providing information to a user terminal

3 being able to display a map comprising the steps of:

4 an information page recording step of

5 recording a specific information page composed of a

6 plurality of elements relating to attribute

7 information out of information pages having said

8 attribute information representing attributes of

9 various information relating to an object or service

10 information relating to said various information in

11 a database by said user terminal;

12 a bubble data registering step of registering

13 by said server bubble data in which spatial range

14 information composed of a latitude of said object, a

15 longitude thereof, an altitude thereof and a bubble

16 diameter thereof in the three-dimensional space is

17 associated with address information for obtaining

18 said service information on the basis of said

19 information page recorded at said information page

20 recording step; and

21 a providing step of providing information

22 generated from said bubble data registered at said

23 bubble data registering step from said server to said

24 user terminal.

1 45.The information providing service method

2 according to claim 44, wherein said bubble data

3 registering step comprises the steps of:

4 a specific document type definition

5　information extracting step of extracting by said
6　server plural pieces of specific document type
7　definition information having a predetermined
8　element out of said document type definition
9　information of said information pages recorded at said
10　information page recording step; and

11　　　a first registering step of registering by
12　said server said plural pieces of specific document
13　type definition information as said bubble data.

1　　　46.The information providing service method
2　according to claim 44, wherein said bubble data
3　registering step comprises the steps of:

4　　　a recording step of recording by said server
5　said information page recorded at said information
6　page recording step in another database; and

7　　　a second registering step of registering by
8　said server said information page recorded at said
9　recording step as bubble data in which spatial range
10　information composed of a latitude of said object, a
11　longitude thereof, an altitude thereof and a bubble
12　diameter thereof in the three-dimensional space is
13　associated with address information for obtaining
14　said service information on said database.